ROYAL GARDENS, KEW.

BULLETIN

OF

MISCELLANEOUS INFORMATION.

No. 2.] FEBRUARY. [1887.

III.—CAPE BOXWOOD.

(*Buxus Macowani.*)

The record of the discovery of a new species of *Buxus* in South Africa is a matter of some interest, not alone from a botanical point of view in consequence of its being the first representative of the genus discovered in South Africa, but economically, because it is thought that the wood may yet become an article of commerce in this country as a substitute for true Boxwood for wood engraving.

The history of the introduction of this wood to the notice of the London hardwood merchants has been given in the "Journal of the Society of Arts" for March 19th, 1886, p. 465. In April 1885 I received a letter from Mr. W. M. E. Welby, of East London, Cape Colony, asking me to give him what information I could on the subject of Boxwood or its substitutes for wood engraving, and further stating "I have a considerable quantity of Cape Boxwood and other hard woods "growing on my farm that I am anxious to turn to some account, and "if the wood in question is really valuable, possibly you could oblige "me with the name of some respectable firm with whom I could "communicate with a view to sending home samples."

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1887.

Price Twopence.

In replying to this letter I gave Mr. Welby the name of Mr. Godfrey S. Saunders, then of 106, Fenchurch Street, a gentleman who has had an extensive experience in hard woods, and to whom the Kew Museum is indebted for frequent reports upon various woods that have been received from time to time. I also asked that a good sample of the wood might be sent for the Museum, thinking it might perhaps prove a better specimen than that of the Cape Box (*Celastrus buxifolius* L.) already contained in the Museum, with which I assumed the wood referred to by Mr. Welby was identical. In July I received another letter from Mr. Welby, of which the following is an extract, "Acting "upon your advice I have addressed a box of wood samples to Mr. "Godfrey S. Saunders, Fenchurch Street, and have enclosed therein a "piece of Boxwood for you which I have asked him to be kind enough "to hand over to you. Immediately on receipt of your letter, I wrote "to the Conservator of Forests for the scientific name of the Boxwood, "but have not yet received his reply. I may state, however, that the "name mentioned in a newspaper article is *Celastrus buxifolius*. Should "this not prove correct, I will write and inform you. Unfortunately "I forgot to put some leaves in the box, and therefore enclose a few "herein. I have never seen the tree in blossom, nor do the natives "seem to know what the flower is like. If, however, it does bear a "flower, I will send you a sample at some future date. The tree grows "to an average height of 30 feet, and as a rule does not exceed 12 or 14 "inches in diameter."

Upon examining this wood, and comparing it and the small specimens of foliage sent with those of *Celastrus buxifolius*, I found that they did not agree, but that the foliage very nearly resembled that of true Box (*Buxus sempervirens*), and upon comparing this sample of Cape Boxwood with Black Sea Boxwood, I found the two woods to be almost identical, so that it was clear the Cape Boxwood was none other than a species of *Buxus*, and perhaps *B. sempervirens* itself.

In September 1885, Mr. Godfrey S. Saunders wrote to me as follows:—Almost simultaneously with the arrival of Mr. Welby's samples, two other samples of the same sort of wood reached here to some friends of mine, so I have had the opportunity of testing not only Mr. W's, which had been seasoning for two years, but also the fresh wood. I have had pieces distributed amongst six practical men, and though they all report favourably of its appearance, they all unite in saying that it does not cut smoothly, but "harsh," "ragged," and that the cutter "blurrs" on the wood, whereas genuine Box cuts quite smoothly. There is also a nasty tendency to split from the centre outwards, instead of the clean way in which Boxwood splits, so that the end of every piece has a series of star shakes. In addition, every log I have cut has very many black specks, quite spoiling it for first rate work, even if good in other respects.

The *Indian Forester* for November 1885 drew attention to the arrival at the West India Dock of 55 pieces of Cape Boxwood, weighing nearly three tons, and described the logs as being of good sizes, and sound and clean grown, and possessing a closeness of grain almost equal to the best Abassian Boxwood, so that it was thought it would be suitable for engraving purposes.

In the report of the Conservator of Forests, King William's Town, for the year 1884, p. 23, it is stated "The coast forests have come into "notice during the year by the discovery that the so-called Cape Box-"wood is of value for engraving and other purposes, for which real "Boxwood is used. The area of Box producing forest in the Buffalo

" River Valley is estimated at 15 square miles. Box also occurs in the " valley of the Keiskama River, near the coast, but has not as yet been " detected west of this in the valleys of the Fish River, Kowie River, " and Bushman's River. A few real Box trees (*Buxus sempervirens*) " have been planted out in the forests in the King William's Town, " Stutterheim, and East London divisions, and supplies of Box seeds for " stocking the nurseries are expected from Paris and India. That from " India, the produce of the Himalayan Box, will probably prove of the " greater value."

Under the head of *East London Forests*, at p. 51 of the same Report, the following occurs :—" The event of the year for these forests has been " the discovery of the commercial value of Cape Boxwood. This is a " small tree like the generality of trees in the East London forests. It " is rarely met with over a foot in diameter by 25 of bole, but it is suf- " ficiently abundant to furnish a large supply of wood. Submitted to " an expert it has been declared to be worth about one penny a cubic " inch, if seasoned, free from cracks.

" Cape Box, Kafir (Gara-gara) does not appear to coppice, but has a " good natural production from seed. The tree was placed on the " reserved list a year ago ; previous to that it had been sold at 5*s*. the " waggon load for firewood. A linear survey, undertaken mainly with " the object of getting an estimate of the quantity of Boxwood in the " East London forests, is now being executed by Captain Ricketts, the " local Ranger."

At the end of 1885 Professor Macowan, Director of the Botanic Gardens, Cape Town, forwarded to Kew specimens which enabled Professor Oliver to describe and figure the South African Box as new species of *Buxus*, under the name of *Buxus Macowani* [Icones Plantarum, t. 1518].

Amongst the woods shown in the Cape Court the recent Colonial and Indian Exhibition were some small samples of this Boxwood, the general appearance of which was not such as to recommend it to the notice of wood engravers, notwithstanding that the Cape catalogue referring to this wood says :—" When Cape Boxwood is better known " in the English market, it is anticipated that an export trade will be " established. Small shipments have already been made to introduce the " wood which is very favourably reported on for engraving purposes," and it is further stated that *The Timber Trades Journal* of 22nd August 1885 declares this wood to be one of the best yet put forward as a substitute for the ever decreasing supply of true Box. The success here anticipated has scarcely yet been borne out by experience. But there is little doubt that a wood suitable for engraving purposes is greatly in demand. If the present Cape Boxwood does not fully meet the requirements of engravers, the subject is one which deserves attention at the Cape and elsewhere. It is but natural to suppose that among so many Colonial timbers there may be one which, if not identical with Boxwood, may possess so many desirable qualities as to commend it for general use.

J. R. J.

IV.—INDUSTRIES AT MAURITIUS.

The following correspondence has passed between the Colonial Office and Kew in regard to industries at Mauritius.

As some of the industries treated here are the subject of inquiry from other Colonies, the correspondence will prove of interest, not only to Mauritius, but to other portions of Her Majesty's possessions :—

COLONIAL OFFICE to ROYAL GARDENS, KEW.

SIR, Downing Street, 17th August 1885.

WITH reference to your letter of the 2nd of May, I am directed by Secretary Colonel Stanley to transmit to you, for such observations thereon as Sir Joseph Hooker may have to offer, the accompanying copy of a despatch from the Governor of Mauritius, enclosing the preliminary report of a Committee which had been appointed to inquire into and report upon the best means of encouraging the cultivation of other products besides sugar.

Colonel Stanley will feel obliged for any suggestions which Sir Joseph Hooker's experience may enable him to make as to the industries which would be most likely to meet with success in Mauritius, and the special steps to be taken to ensure, as far as possible, such success.

I am, &c.

W. T. Thiselton Dyer, Esq., C.M.G., Royal Gardens, Kew. (Signed) JOHN BRAMSTON.

ROYAL GARDENS, KEW, to COLONIAL OFFICE.

SIR, Royal Gardens, Kew, 18th August 1885.

I HAVE the honour to acknowledge the receipt of your letter of August 17th, transmitting, for the information of Sir Joseph Hooker, a copy of a despatch from the Governor of Mauritius, with enclosures relating to the promotion of new planting industries, in the Colony. I am to make the following remarks on a perusal of these papers :—

2. Tobacco is only an exhausting crop, in the sense that its quality rapidly deteriorates on soil which is not kept to a high standard of fertility. In Cuba the alluvium brought down by rivers perpetually renews the soil on which the tobacco is grown. But tobacco nevertheless of average quality is grown to an enormous extent in various parts of the world. If it can be grown "of a quality sufficiently good to command remunerative prices in Réunion" it would certainly seem to deserve encouragement in Mauritius.

3. With regard to tea, Sir Joseph Hooker thinks that due caution must be exercised. Mauritius will have to meet the competition of Ceylon and India, in which the cultivation is capable of almost indefinite expansion. Tea, moreover, to be a profitable industry, is entirely dependent on an exact adjustment of the supply of labour. It must also be remembered that the extension of tea cultivation in Mauritius means the ultimate destruction of the little remaining high-level forest.

4. More attention ought undoubtedly to be paid to Cinchona. Reference may be made to the report of Her Majesty's Consul at Réunion, dated August 25th, 1881, which shows that in that island, at any rate, the

cultivation of Cinchona apparently presents no physical difficulties. I may also refer to my letter of March 7th, 1881, to Sir Robert Herbert, which was referred to the Government of Mauritius, but elicited no further reply. The economy in the large expenditure by the Government of Mauritius upon quinine, presumably imported from Europe, would alone seem to justify some intelligent activity in the matter.

5. The leaf disease of the coffee in Ceylon has unfortunately extended to Mauritius. Liberian coffee, though not apparently enjoying complete immunity from the disease, is less susceptible to it than the ordinary kind. Its cultivation may also be carried on at a lower level. There is believed to be a steady demand for this kind of coffee in the United States.

6. As to silk, if it is intended to grow any of the mulberry-feeding kinds, Sir Joseph Hooker cannot but apprehend that the climate of Mauritius will be found too hot, and the Indian Tasar silks have not yet been domesticated.

7. With regard to wheat, &c., it is hardly conceivable that in the face of the great areas devoted to this staple in India and Australia that Mauritius can do much more than for local consumption. The cultivation of oil-seeds is a more promising industry, and for these there would be probably a good market at Marseilles.

8. Something might be done probably with Cacao, in carefully selected situations. The cultivation of Vanilla was taken up in Réunion in 1850 after the failure of the sugar cane. It is now said to be the mainstay of that island. The preparation of the pods is peculiarly an industry suited to the resources of small proprietors.

9. Sir Joseph Hooker would also particularly urge on the attention of proprietors with suitable land the cultivation on their estates of choice woods, such as Ebony and Sandal. For these there is always a demand and a market. The cultivation of spices, such as Cloves, is also worth attention.

10. It is to be regretted that the apparently promising fibre industry has not prospered. That there must be a solid bottom to it Sir Joseph Hooker is, however, convinced. The aloe fibre produced in the colony met with great favour. Manilla Hemp, again, is a staple unsurpassed in its kind. Finally China Grass, though presenting extreme difficulty in its preparation otherwise than by hand, is a fibre which, if this difficulty could be overcome, would carry everything before it. It is exciting a great deal of attention in Europe at the moment, and, whether by mechanical or chemical means, there is reason to hope that a practicable method will be found of preparing it on a large scale. Sir Joseph Hooker thinks, that on the whole, the best thing the colony can do is to send to Europe some thoroughly intelligent representative, with his heart really engaged in the matter, to study the whole question of the commerce and economic manipulation of tropical fibres. Both in France and England great interest is now taken in the future of China Grass, and such a commissioner should make it his business to thoroughly penetrate the subject.

11. Sir Joseph Hooker would like, as remarked in my letter of May 2 last, to see a report from the Director of the Botanic Garden as to the suggestions that occur to him in the present crisis.

I am, &c.

(Signed) W. T. Thiselton Dyer.

John Bramston, Esq., D.C.L., C.B.,
Colonial Office.

ROYAL GARDENS, KEW, to COLONIAL OFFICE.

SIR, Royal Gardens, Kew, 2nd December 1886.

REFERRING to my letter of August 18th, 1885, in which I suggested that the Director of the Botanic Garden, Mauritius, might furnish a report on the economic plants to which, in the present economic position of the colony, attention might be given, I have now the honour to inform you that I have been favoured by Mr. Horne with copies of the enclosed paper.

2. This document reflects great credit on Mr. Horne's knowledge and resource, and, if properly brought under the attention of the residents in the island, can hardly fail to suggest many practicable developments of new cultural industries.

3. Mr. Morris, the Assistant Director of this establishment, having a wide acquaintance with the subject, has drawn up the enclosed memorandum, which I have the honour to submit to the Secretary of State, in the hope that the suggestions it contains may be of some service to the Government of the colony.

I am, &c.

Edward Wingfield, Esq., Colonial Office. (Signed) W. T. THISELTON DYER.

MEMORANDUM of OBSERVATIONS on Mr. HORNE'S REPORT on the AGRICULTURAL RESOURCES OF MAURITIUS.

The "Report on the Agricultural Resources of Mauritius," prepared by Mr. Horne, gives in general outline a graphic statement of the present position of local industries outside and beyond that of sugar, which, it may be observed, is the staple industry of the island.

2. The intention and idea of the report evidently has been not so much to suggest industries to take the place of sugar, as to enlarge the scope and area of the smaller industries on lands worn out or not suited to the production of sugar.

3. That Mr. Horne is solicitous as regards sugar as well as other things is apparent in several pages of the report, and no doubt, in common with all who feel an interest in the island, he is anxious to improve the cultivation of the sugar cane, and to see produced at a minimum cost the finest grades of sugar which improved machinery and the best scientific methods can produce.

4. In view of the expenditure already incurred by planters, local societies, and by Government, in introducing new varieties of sugar canes, in fostering Coolie immigration, and in other ways admitting the pre-eminence of sugar, it is evident that the staple industry of Mauritius has received every consideration to which it could fairly lay claim.

5. After stating this much by way of introduction we now come to the suggestions made by Mr. Horne respecting the promotion of such fresh industries, or the revival of old ones, which offer some hope of being profitably taken up alongside of sugar cultivation.

6. The cocoa-nut, which comes first on the list, would appear not to receive that attention at Mauritius which its value and merit deserves, and the suggestion made by Mr. Horne to secure the planting of cocoa-

nuts on the *Pas Geometriques* deserves the attention of Government. Unless there are some grounds for assuming that cocoa-nuts do not thrive so well at Mauritius as in other tropical places in the Indian Ocean, it is somewhat anomalous that this fertile island cannot grow even enough green cocoa-nuts for the use of the inhabitants. It would appear that, in the year 1884, nearly Rs. 30,000 were spent on green nuts imported from other countries, while the total value of the produce of the cocoa-nut palm imported from abroad and consumed in the colony, amounted to Rs. 170,000.

7. The occurrence of periodical hurricanes at Mauritius is a factor which must operate very prejudicially against the establishment of trees as a permanent cultivation. It would appear, however, from Mr. Horne's remarks, that he does not apprehend any "serious loss arising "to cocoa-nut plantations from these hurricanes." If this, as it is presumed to be, is the result of experience and observation extending over many years, there is no reason why this industry, at least, is not greatly extended in all suitable localities.

8. With regard to the cultivation of cacao (chocolate), coffee, cinchona, and tea the case is quite different. These are not likely to thrive except in well-sheltered situations, to escape hurricanes, and, in localities sufficiently cool and moist, to be beyond the influence of prolonged droughts. Cacao is the least likely to thrive in Mauritius. Coffee might thrive if relieved of the attacks of the Ceylon coffee-leaf disease, but of this, however, there would appear to be little hope at present. For local consumption Liberian coffee might be grown, but the tree yielding this, although better able to withstand the disease, being larger than the ordinary coffee, is all the more liable to be damaged by hurricanes.

9. The cultivation of the several species of cinchona, except perhaps to a limited extent red bark (*Cinchona succirubra*), is not likely to be a success at Mauritius, for the extent of land at a suitable elevation even for that species and sufficiently protected from destructive winds must be too small to afford scope for anything more than a limited industry. The cuprea bark trees (Remijia) will grow at a lower elevation than the true cinchona trees, and experiments with these from seed lately sent from Kew would afford more hope of success.

10. Tea is grown in Ceylon from sea level up to an elevation of 6,000 feet, but "the average altitude of the larger districts is about 4,000 feet above sea level." It is possible that all the physical conditions exist for establishing a tea industry in Mauritius, but it must be borne in mind that unless tea can be grown, manufactured, and placed in the London market at a cost without duty not exceeding 6*d.* to 7*d.* per pound, there will be little hope of successfully competing with the large consignments (estimated at about 40 million pounds) which Ceylon will be able to ship "in the near future." The tea plant in itself is very hardy and grows everywhere. The chief problems, however, are connected with maintaining the plant in a constant state of growth (that is, securing for it a warm, humid, and forcing climate) to ensure large "flushes"; and to have at hand an abundant supply of cheap labour. The large number of tea plants, estimated at about 30,000, already in the island should afford a ready means of testing the capabilities of a tea industry as well as the cost of production.

11. As regards the cultivation of cereals and pulse such plants as maize, rice, millets, and gram, haricot beans, dhal, lentils, peas, all deserve to be grown on a large scale, not only to supply local demands, but also, when favourable markets offer, for export purposes. The consumption of rice

in the colony is very large, and all of it is imported. If there is an appreciable amount of land suitable for the cultivation of rice in the island, the free Coolies might be encouraged to start the cultivation by having leased to them small plots of Government land at nominal rates. An experiment of this kind tried on an estate in Jamaica, proved very successful. To establish a cultivation new to the habits of the people, and to thoroughly popularise it amongst small settlers, it is necessary to offer some substantial inducements at first, and according to the views of the Mauritius Government it might assume the shape of a grant of land or lease for a certain number of years, or a bonus on results, both of which might afterwards be gradually withdrawn.

12. Maize or Indian corn, if suitable to the country, should require only to be brought prominently before the people to be grown to any extent required to meet at least local circumstances. For dry districts there is no cereal which is so well adapted to yield regular crops as Guinea corn and other more or less known species of Sorghum. They afford a large supply of green food for cattle and horses, they bear cutting, and the grain is capable of being utilised in a variety of ways both for man and animals.

13. The Indian immigrants no doubt might be induced to establish the cultivation of gram (*Cicer arietinum*) in Mauritius, which it is noticed is imported to the value of Rs. 673,280. Again dhal (*Cajanus indicus*) is imported to the value of Rs. 349,546 annually. It is a matter for consideration, and to be decided solely by local circumstances, whether these two plants can be grown so cheaply and advantageously at Mauritius as in Southern India; but in view of the enormous sums now paid for imported gram and dhal the subject is one of considerable importance.

14. A careful inquiry into the disease said to affect the crops of dhal (known locally as *Ambrevate* or *Ambrevade*) is obviously necessary; and any practical means that may be suggested should be taken to deal with it. It is possible that the introduction of fresh seed may be advantageous as a first step towards resuscitating an industry which formerly appears to have assumed considerable importance in Mauritius.

15. The capabilities of Mauritius, to grow at least two commercial fruits, viz., bananas and pine-apples, are undoubted. The returns on the exports of these two fruits at Jamaica and the Bahamas amount in the aggregate to nearly a quarter of a million sterling. Hence it is not a question of producing a large variety of fruit so much as of producing cheaply and in large quantities a few commercial fruits for which there is a general demand.

16. It appears from Mr. Horne's report that regular and rapid communication exists between Mauritius and the Cape of Good Hope, and again by the Messageries Maritimes between Mauritius and Adelaide. These circumstances obviously suggest the proper outlet for fresh tropical fruits, especially during the winter months; and either with or without a subsidy to ensure special attention to the fruit during the voyage, the planters and merchants of Mauritius need only be made aware of what is done in this direction in other colonies to avail themselves of such favourable means to develop local industries.

17. Pine-apples will keep without special storage for a voyage of seven to ten days if packed singly in compartments, and allowed plenty of ventilation in a cool hold. For a voyage of 10 to 18 days they require to be kept in a special cool chamber, the temperature of which should be regularly maintained at about 45° Fahrenheit. Under such conditions not only pine-apples, but also bananas, avocado pears, bread-

fruit, melons, papaw, sapodilla, are now received in England from the West Indies, the steamer taking generally 18 days for the whole voyage.

18. Such fruits as cannot be exported in a fresh state might be canned or dried, and under this head the example of Singapore in canning and exporting pine-apples, whole in syrup, might be appropriately brought to notice.

19. Purposely here attention is drawn only to a few special fruits, but it is plainly evident that at Mauritius the subject of fruit growing for export purposes (either in a fresh or canned state) has not been seriously entertained nor has the subject received the attention it deserves.

20. Allied to fruit growing is the subject of growing market-garden produce, for which no doubt there would be considerable demand in a fresh state at the Cape or at the diamond fields, if preserved and put up in a convenient and portable manner.

21. Mr. Horne has very rightly discussed at some length, and given much valuable information respecting starches, dyes, oils, spices, fibres, silk, india-rubber, gutta-percha, tobacco, tanning materials, timbers and fancy woods, all of which deserve attention, and many are undoubtedly capable of being successfully produced in the colony.

22. It is not proposed to discuss these here in detail. As circumstances arise they should be kept in view, and, as a first step to give effect to the suggestions offered, it might be desirable to obtain the latest and most reliable information respecting them and where necessary introduce the plants required for certain new industries.

23. As regards all these industries, whether old or new, it is desirable that detailed cultural and other information of a popular character be prepared for general distribution in the island. Such notes and information printed in the form of leaflets might also contain exact information as regards the most approved methods for preparing and curing the produce, and, indeed, all particulars that may be necessary to familiarise the people with the prosecution of industries comparatively new to them.

24. Mr. Horne's report has dealt with the agricultural resources and economic circumstances of Mauritius in a manner never done before; and if followed up by a practical and judicious effort on the part of the Government and the people themselves, it cannot fail to produce results of a beneficial and permanent character.

D. M.

COLONIAL OFFICE to ROYAL GARDENS, KEW.

Colonial Office, Downing Street,
13 December, 1886.

SIR,

IN reply to your letter of the 2nd instant, I am directed by Mr. Secretary Stanhope to convey his thanks for the observations by Mr. Morris on Mr. Horne's report on the agricultural resources of Mauritius.

Your letter, and Mr. Morris's Memorandum, will be communicated to the Governor for his consideration in connexion with Mr. Horne's report.

I am, &c.
(Signed) EDWARD WINGFIELD.

W. T. Thiselton Dyer, Esq., C.M.G., F.R.S.,
&c. &c. &c.

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